Originals

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Japanese species of *Parmelia* Ach. (sens. str.), Parmeliaceae (3)

Syo KUROKAWA

1101 Kurose 47, Toyama, 939 JAPAN

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Six species of *Parmelia, P. adaugescens, P. angustifolia, P. erumpens, P. fertilis, P. marmariza*, and *P. marmorophylla*, belonging to the subgenus Parmelia are revised in the third report of the present series. *P. angustifolia* is recognized as a distinct species, though it was described as a form of *P. marmariza*. *P. fertilis* is conspecific with *P. cochleata*, the former having the priority. On the one hand, *P. marmariza* is conspecific with *P. submarmariza*, the former having the priority. Most specimens formerly reported as *P. marmariza* can be identified with *P. marmorophylla*, which is herewith described as a new species.

(Continued from J. Jpn. Bot. **69**: 121–126, 1994)

Subgenus **Parmelia**

Thallus foliose, lobes subirregular to sublinear, 1–9 mm wide, pseudocyphellae angular to linear, marginal and laminal, lower surface uniformly rhizinate, the rhizines simple, furcate, or squarrose. Apothecia adnate to substipitate, spores simple, colorless, less than 18 μm long, less commonly upto 36 μm long.

Type species. *Parmelia saxatilis* (L.) Ach.

This subgenus includes most species which have been known as members of the genus *Parmelia*. Some species are widely distributed in temperate and boreal zones in both hemispheres and others are endemic to rather restricted areas. They have angular or linear aggregates of pseudocyphellae covered with pored polysaccharide epicortex. Lower surface of lobes uniformly black and rhizinates. Atranorin and salazinic acid are common secondary products of species of subgenus Parmelia, but a few species produce norstic acid, protocetraric, lobaric or fatty acids as major products in the medulla or gyrophoric acid in the cortex.

Parmelia adaugescens Nyl., Lich. Jap. 28. 1890. Type collection. Itchigome, (Mt. Fuji), Japan, Almquist s. n. (lectotype in H, Nyl. Herb. no. 34876).

Parmelia pseudomarmariza Awasthi, Biol. Mem. **1**: 186. 1976. Type collection. Mervakhola Valley, Nepal, Awasthi 2305 (holotype in Herb. of Awasthi) – not seen.

Thallus adnate to loosely adnate on bark of trees or very rarely growing over mosses on rocks, mineral gray to greenish mineral gray, 8–15 cm broad, lobes subirregular, rather short, contiguous to more or less imbricate, without isidia and soredia, 1–4(–6) mm wide, upper surface shiny, plane or more or less foveolate, tangentially or irregularly cracked on older lobes, pseudocyphellae marginal and laminal, more or less white-rimmed, often a little elevated especially on older lobes, marginal pseudocyphellae inconspicuous and discontinuous, laminal pseudocyphellae angular and sparse to moderate, but often linear elongate (upto 3 mm long) and rarely fusing into a subreticulate network; medulla white; lower surface black, moderately to densely rhizinate, the rhizines mostly furcate, 0.5–1.5 mm or sometimes more than 2 mm long. Pycnidia common, conidia weakly bifusiform, about 0.5 μm long. Apothecia common, substipitate, 2–8(–17) mm in diameter, disc brown, radially fissured with age, amphithecium smooth and rather sparsely pseudocyphellate in juvenile stages, rugose with elevated white-rimmed pseudocyphellae in older stages, hymenium 90–120 μm high, spores 12–18×20–28 μm.

Chemistry. Atranorin, salazinic acid (in chemical strain I) or atranorin, salazinic acid, and fatty acids (in chemical strain II).

Distribution. Japan, Taiwan, and the Himalayan region.

Parmelia adaugescens (Fig. 6) is characterized by large spores (12–18×20–28 μm) and fertile specimens are readily distinguished from the related species by the spore size. Most specimens that I have examined bear well-developed apothecia, in which well-developed spores are produced. A number of sterile specimens have been also collected in Japan and Taiwan. They are identified with this species with some difficulty by having shiny upper surface with moderate-sized pseudocyphellae (0.5–2.0 mm long) rarely forming a network and by lacking helmet-shaped secondary lobules.

This species may be confused with *P. fertilis*, from which it is clearly distinguished by the large spores. Laminal pseudocyphellae of the present species are a little longer and denser than those of *P. fertilis* and more or less white-rimmed. Hood- or helmet-shaped lobules characteristic of *P. fertilis* are not found in *P. adaugescens*.

Fatty acids are often demonstrated on thin layer chromatograms in the present species. They have been demonstrated in eight of 14 specimens collected in Hokkaido, ten of 38 in Honshu, one of nine in Shikoku, and one of 20 in Taiwan. No morphological difference has been found in chemical races with and

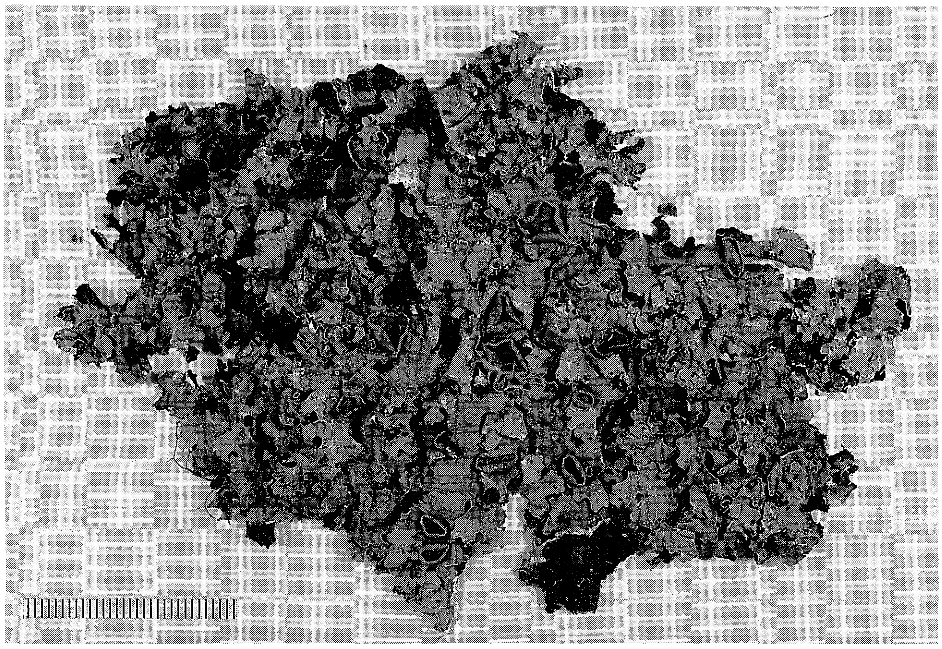

Fig. 6. Lectotype of *P. adaugescens*. Scale indicates mm.

without fatty acids.

This species is quite common in Japan and Taiwan and the range extends so far west as Pakistan in Asia (Hale 1987). In Hokkaido, it is common on trunks of *Betula ermanii, Abies sachalinensis,* and *Picea yezoensis* at elevations 500–1900 m. In Honshu, it is common on trunks of *Betula ermanii, Abies mariesii, A. veitchii, Tsuga diversifolia*, etc. in subalpine conifer forests developed at elevations 1500–2800 m. In Taiwan, it is also common on trunks of subalpine conifers at elevations 2200–3900 m.

In the following list, specimens belonging to the chemical race II are marked with asterisks.

Representative specimens examined. Japan. Hokkaido. Prov. Teshio: Mt. Panke, Nakagawa-gun, on trunk of *Abies sachalinensis*, elevation about 500 m, S. Kurokawa 70804*. Prov. Ishikari: Mt. Furano, Furebetsu, on trunk of *Betula ermanii*, elevation about 800 m, S. Kurokawa 65367b (TNS, H, MEL). Honshu. Prov. Iwashiro: Mt. Iegata, Mts. Azuma, S. Kurokawa 58169*. Prov. Shimotsuke: Mt. Nantai, Nikko, on trunk of *Betula ermanii*, elevation about 2050 m, S. Kurokawa 81073 (TNS, H). Prov. Shinano: en route between Mt. Kokushi and Mt. Kobushi, S. Kurokawa 540257 (TNS, B); Mt. Kimpu, elevation about 2570 m, S. Kurokawa 65275* (TNS, H); Mt. Azumaya, Sugadaira, S. Kurokawa 50230 (TNS, MEL); Mt. Goryu, on rocks, S. Kurokawa 51432* (TNS, DUKE); Shibunoyu Hot Spring, Yatsugatake Mts., elevation about 1800 m, S. Kurokawa 58268 (TNS, H, US). Shikoku. Prov. Awa: Mt. Kenzan, F. Fujikawa s. n. Prov. Iyo: Mt. Ishizuchi, elevation about 1650 m, S. Kurokawa 72215. Taiwan. Prov. Ilan: Mt. Nanfutasan, elevation 2600–3000 m, S. Kurokawa 1209, 1213 (TNS, US). Pref. Taitung: Bayu Lake, elevation about 2200 m, S. Kurokawa 2404* (TNS, M, TAI). Pref. Chiayi: Mt. Shinkaosan, elevation 3600–3900 m, S. Kurokawa 388 (TNS, LD, UPS), 392 (TNS, H).

Parmelia angustifolia (Asah.) Kurok., comb. nov.

Parmelia marmariza f. *angustifolia* Asah., J. Jpn. Bot. **26**: 353. 1951. Type collection. Shimoda, Prov. Idzu, Japan, Y. Asahina s. n. (lectotype in TNS).

Thallus adnate on trunks or twigs of trees, mineral or greenish gray, without isidia and soredia, 5–8 cm broad, lobes short, subirregular, truncate at apices, 1–2 mm wide, upper surface dull, continuous, not foveolate, often black-rimmed at the margin, pseudocyphellae marginal and laminal, marginal pseudocyphellae subcontinuous, laminal pseudocyphellae sparse and short, less than 0.5 mm long, usually white-rimmed and distinctly elevated especially on older lobes, hardly forming a network; medulla white; lower surface black, moderately rhizinate, the rhizines black, shiny simple or furcate, up to 2 mm long. Apothecia substipitate, 3–7 mm in diameter, disc dark brown, often radially fissured, margin often undulate, amphithecium ridged with white-rimmed and elevated pseudocyphellae, hymenium 60–70 μm high, asci 25×50–60 μm, spores colorless, 8–9×12–14 μm.

Chemistry. Atranorin and salazinic acid.

Distribution. Endemic to southern Japan.

Even though this species was described as a form of *P. marmariza* (= *P. marmorophylla* Kurok. in this paper) by Asahina (1951), it does not seem to have any relation to the latter species, because the lobes of the present species are much narrower (1–2 mm wide) (Fig. 7A) than those of *P. marmorophylla* (2–9 mm wide). Although laminal pseudocyphellae are short and usually less than 0.5 mm long in both species, they are sparse and often distinctly white-rimmed and elevated in *P. angustifolia* (Fig. 7B), whereas they are crowded but neither conspicuously white-rimmed nor elevated in *P. marmorophylla* (Fig. 2C).

The present species seems to be endemic to southern Japan, where it is apparently very rare.

Additional specimens examined. Shikoku. Prov. Iyo: Mt. Takanawa, Hojo City, on bark of *Fagus crenata*, elevation about 950 m, H. Kashiwadani

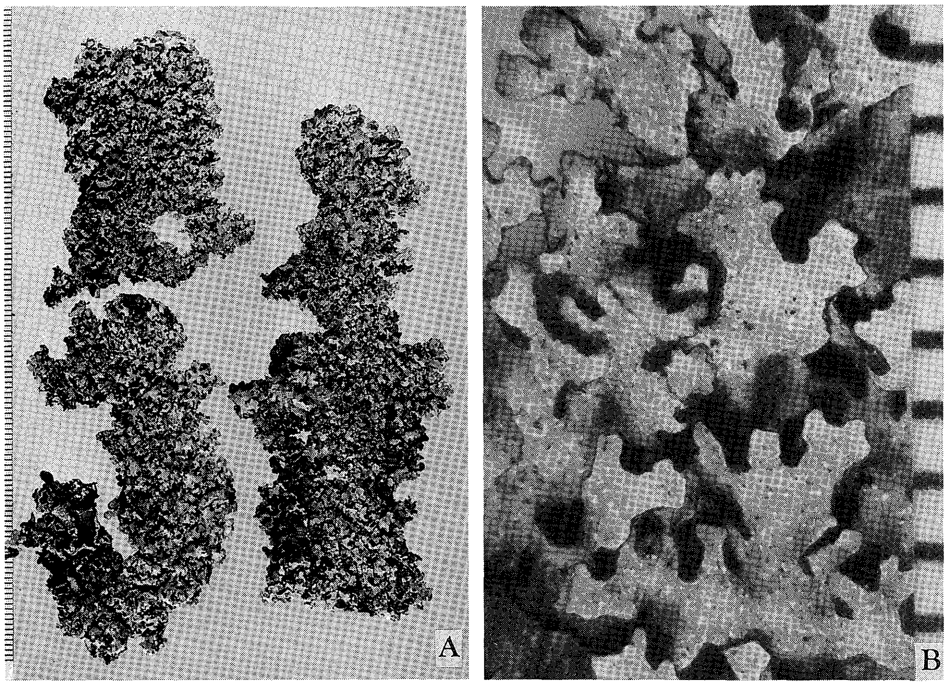

Fig. 7. *P. angustifolia*. Scales indicate mm. A: Lectotype of *P. marmariza* f. *angustifolia*. B: Part of the lectotype, showing lobes with short laminal pseudocyphellae.

6160. Prov. Tosa: Mt. Kajigamori, Nagaoka-gun, elevation about 900 m, H. Kashiwadani 6884. Kyushu. Yakushima Island, F. Fujikawa s. n. (Herb. Nat. Sci. Mus. 5669 – syntype of *P. marmariza* f. *angustifolia*); the same locality, F. Fujikawa s. n. (Herb. Nat. Sci. Mus. 5671 – syntype of *P. marmariza* f. *angustifolia*).

Parmelia erumpens Kurok., Lich. Rar. Crit. Exs. no. 74. 1969. [based on *Parmelia tenuirima* f. *corallina* Müll. Arg.]

Parmelia tenuirima f. *corallina* Müll. Arg., Flora **66**: 46, 1883. Type collection. Gippsland, Australia, Stirling s. n. (lectotype in G and isolectotype in US).

Thallus adnate to loosely adnate on rocks and trees, more or less brittle, pale greenish to whitish mineral gray, 8–15 cm broad, lobes subirregular, *short, apically rotund, contiguous to imbricate*, 2–8 mm wide, upper surface dull to shiny, plane to more or less foveolate, soon becoming conspicuously reticulately cracked, pustulate or pustulate-sorediate, soredia coarse and subisidiate, often bursting apically, pseudocyphellae marginal and laminal, effigurate, laminal pseudocyphellae 0.3–2.0 mm long, dense, more or less white-rimmed but not elevated, fusing into a subreticulate network over the whole surface; medulla white; lower surface black, moderately rhizinate, the rhizines simple or squarrosely branched at maturity, 1–2 mm long. Pycnidia and apothecia not seen in Japanese materials.

Chemistry. Atranorin, chloroatranorin, salazinic acid (Galloway and Elix 1983) and consalazinic acid (Hale 1987).

Distribution. Australia, New Zealand, Papua New Guinea, South Africa, Indonesia, Sabah, India, Nepal, Taiwan, and Japan.

This is the only pustulate or pustulate-sorediate species of *Parmelia*. After the Australian-eastern Asian distribution of this species was reported by Kurokawa (1969), Kashiwadani (1979) added another locality in Japan and Hale (1987) summarized its Asian-African distribution. Recently, in addition, Sharma and Kurokawa (1990) reported this species from Nepal.

Judging from the distribution range known at present, it may be safely considered that the present species originated in a part of Gondowana Land and has been separated into three major present distribution areas, Australia, southern Africa and southern India. In the Australian-Asian zone it has extended the range northwards to Japan via New Guinea and Taiwan probably by the influences of Taiphoons. Although this species has not been recorded from New Guinea and the Philippines, by the way, two specimens collected in Papua New Guinea are preserved in TNS (see below) and the occurrence of the species in the Philippines is anticipated. It is a weedy species on rocks, wooden fence posts, and tree trunks in Australia, but it is known from only three scattered localities in Japan as listed below.

Specimens collected in Japan and Papua New Guinea. Japan. Prov. Sagami: Motoyamanaka, Hakone, on bark, com. Y. Asahina. Prov. Izu: Matsuzaki, Kamo-gun, on rocks, H. Kashiwadani 15003. Prov. Mikawa: Mt. Horaiji, on stone-work, S. Kurokawa 66032. Papua New Guinea. Morobe District: between Wau and Kaisenik, elevation 1500–1700, S. Kurokawa 9650. Eastern Highland District: Bismark Ranges, Mount Wilhelm, on rocks, 14,000 ft., W. A. Weber & D. McVean L-48458.

Parmelia fertilis Müll. Arg., Flora **70**: 316, 1887. Type collection. Siberia, USSR, comm. Lahm 7 (lectotype in G).

Parmelia cochleata Zahlbr., Bot. Mag. Tokyo **41**: 350, 1927. Type collection. Mt. Fuji, Japan, Y. Asahina 27 (holotype in W and isotype in TNS).

Parmelia marmariza var. *physcioides* Zahlbr., Bot. Mag. Tokyo **41**: 352, 1927. Type collection. Mt. Buko, Prov. Musashi, Japan, Asahina 24 (holotype in W, and isotype in TNS).

Parmelia pseudosaxatilis Asah., J. Jpn. Bot. **26**: 354, 1927. [Based on *Parmelia marmariza* var. *physcioides* Zahlbr.].

Thallus adnate to loosely adnate on bark or rarely over mosses on rocks, 6–10 cm broad, lobes subirregular to irregular, crowded, short, often imbricate, 1–5 mm wide, the margins lobulate, the lobules hardly branched, rotund at apices and with distinct basal constriction, usually hood- or helmet-shaped, 1–2 or less commonly more than 3 mm wide, upper surface plane to weakly foveolate, continuous, shiny, rarely pruinose near the lobe tips, pseudocyphellae marginal and laminal, faintly white-rimmed, flat and not elevated, marginal pseudocyphellae not conspicuous, subcontinuous, laminal pseudocyphellae short, mostly 0.1–0.7 mm long, only sparsely developed and hardly forming a network; medulla white; lower surface black, sparsely to moderately rhizinate, the rhizines simple to furcate, 0.5–2 mm long. Pycnidia numerous, conidia cylindrical to weakly bifusiform, 6–7 μm long. Apothecia numerous, substipitate, 3–8(–15) mm in diameter, margin more or less undulate at maturity, disc brown to dark brown, radially split with age, the amphithecium smooth, sparsely pseudocyphellate, hymenium 50–65 μm high, spores poorly developed, 6–9×10–15 μm.

Chemistry. Atranorin, salazinic acid, and trace of protocetraric acid (+ or –).

Distribution. Hokkaido to Yakushima Island in Kyushu, Siberia, Saghalien, Northeast China, and Korea.

This species is characterized by very sparse and short laminal pseudocyphellae and hood- or helmet-shaped lobules formed on the margin and rarely on the surface of lobes. These secondary lobules have rotund apices but are never ascending. Spores are less than 15 μm long, but usually poorly developed even in well-developed apothecia.

The name *P. fertilis* has long been adopted to a species with squarrosely branched rhizines (Yoshimura 1974, Hale 1987). Although the lectotype specimen preserved in G (Fig. 8A) is rather small, however, no squarrose rhizines are found but simple and furcate rhizines are present. In addition, the upper surface is rather shiny and sparsely pseudocyphellate (Fig. 2A) and some hood-shaped lobules are found in the lectotype (Fig. 8B). These features are also characteristic of *P. cochleata* and these two are apparently conspecific, the name *P. fertilis* having the priority.

Although the lectotype was collected in Siberia, *P. fertilis* is one of the commonest species of *Parmelia* in Japan, distributed in Hokkaido through Yakushima Island of Kyushu. Hale (1987) reported this species only from Japan, Korea, and Siberia. However, specimens collected in Saghalien and one specimen collected in Northeast China (Chunghsintsan, Prov. Heiho, Mantchuria, M. Takahashi 2928) were also identified with the present species. In Japan, this species is common on trunks of various deciduous trees such as *Tilia japonica, Alnus hirtusa, Fagus crenata, Prunus* spp., *Acer* spp., and *Betula* spp. as well as conifers such as *Larix leptolepis* and *Abies firma* on lowlands and montane areas.

In 1971, Kurokawa and Nakanishi reported the production of fatty acids in *P. fertilis* (under *P. cochleata* at that time) in two of five specimens. However, these specimens are now identified with *P. adaugescens*. Fatty acids have been demonstrated in none of 96 specimens of this species examined.

Exsiccatae examined. Kurokawa, Lich. Rar. Crit. Exs., nos. 27 and 182 (distributed as *Parmelia cochleata*).

Parmelia marmariza Nyl., Lich. Jap. 28, 1890. Type collection: Itchigome, (Mt. Fuji), Japan, Almquist s. n. (lectotype in H, Nyl. Herb. 34879).

Parmelia submarmariza Asah., J. Jpn. Bot. **28**: 65, 1953. Type collection. Mt. Kenzan, Prov. Awa,

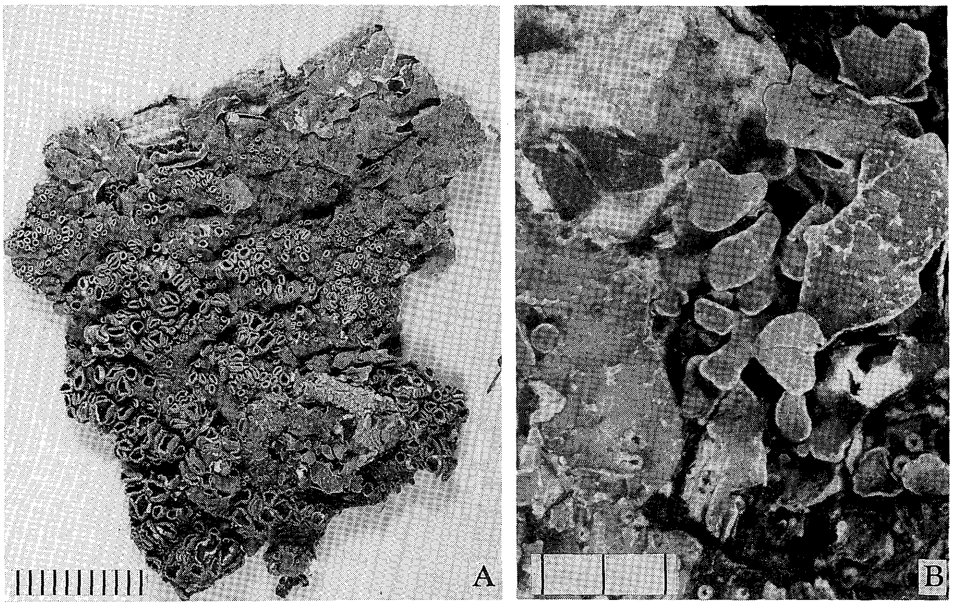

Fig. 8. Lectotype of *P. fertilis*. Scales indicate mm. A: Thallus. B: Lobes, showing hood-shaped lobules.

Shikoku, Japan, F. Fujikawa s. n. (holotype in TNS).

Thallus adnate on trunks or sometimes on twigs of trees, greenish mineral gray, lacking isidia and soredia, 4–11 cm broad, lobes sublinear to subirregular, contiguous to imbricate, 1.5–3(–4) mm wide, obtuse or subtruncate at apices, upper surface plane, shiny, tangentially or irregularly cracked on older lobes, pseudocyphellae marginal and laminal, more or less white-rimmed, never elevated, marginal pseudocyphellae inconspicuous and discontinuous, laminal pseudocyphellae minute and crowded, 0.1–0.5 mm long, sometimes fusing into a subreticulate network, lower surface black, more or less densely rhizinate, rhizines simple or furcate, to 2 mm long. Pycnidia common, conidia cylindrical, about 5 μm long. Apothecia rather common, substipitate, 1.5–5(–11) mm in diameter, margin inrolled, disc brown, amphithecium smooth, minutely pseudocyphellate, the pseudocyphellae usually forming a subreticulate network but not elevated, spores poorly developed, 7–10×12–14 μm.

Chemistry. Atranorin, salazinic acid, and fatty acids.

Distribution. Endemic to Japan (Hokkaido, Honshu, and Shikoku).

Parmelia marmariza (Fig. 9A) can be characterized morphologically by the rather narrow (1.5–3 mm wide) lobes with obtuse or subtruncate apices and small numerous and dense pseudocyphellae (Fig. 10B) on the lobe surface and by the smooth amphithecium. These features are also characteristic of *P. submarmariza* (Asahina 1952) (Fig. 10A). Chemically, in addition, fatty acids were demonstrated by the crystal and TLC methods in the type specimens of *P. marmariza* and *P. submarmariza*. Thus, *P. marmariza* and *P. submarmariza* can be considered to be conspecific, the name *P. marmariza* having the priority. Fatty acids have been demonstrated in all specimens cited below.

The name *P. marmariza* has been adopted to another Japanese species of *Parmelia, P. marmorophylla,* with minute crowded laminal pseudocyphellae. The differences between these two species will be discussed under *P. marmorophylla.*

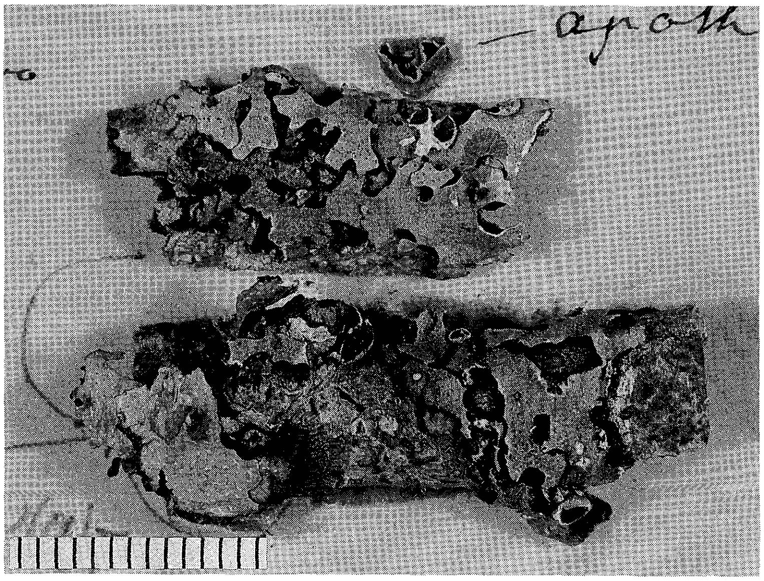

Fig. 9. Lectotype of *P. marmariza*. Scale indicates mm.

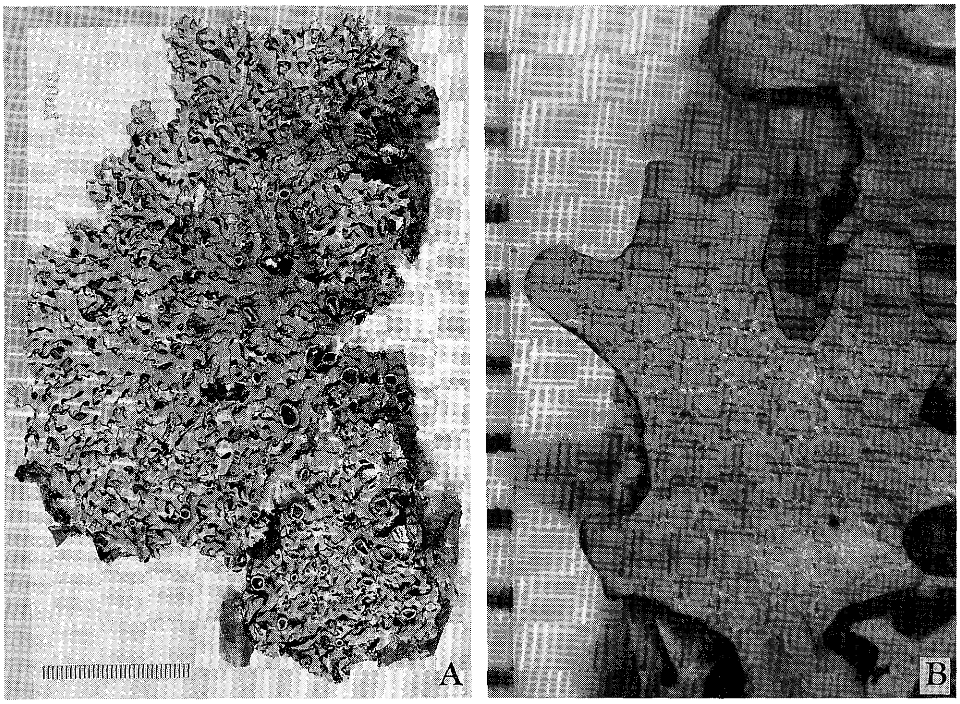

Fig. 10. Holotype of *P. submarmariza*. A: Thallus. B: part of the holotype, showing laminal pseudocyphellae.

When Asahina described *P. submarmariza*, he (Asahina 1953) considered it was closely related to *P. marmariza* (= *P. marmorophylla* in this paper) and emphasized that his new species was distinguished from the latter by having smooth amphithecium, smaller spores (8–9×8–11 μm) and straight conidia. However, the spores and conidia are not significantly different from those of *P. marmorophylla*.

This species is apparently endemic to Japan and is rather rare, being sporadically distributed in Hokkaido through Shikoku in Japan.

Specimens examined. Hokkaido. Prov. Iburi: Mt. Eniwa, on trunk of *Alnus hirsuta* var. *sibirica*, elevation about 1100 m, Y. Endo 78. Honshu. Prov. Rikuchu: Around Sukawa Hot Spring, Mt. Kurikoma, on twigs of *Sorbus commixta*, elevation about 1200 m, H. Kashiwadani 20205. Prov. Shinano: Umagaeshi, Mt. Tadeshina, K. Shibayama s. n.; Mt. Azumaya, Chiisagata-gun, S. Kurokawa 50226. Prov. Sagami: Kamiyama, Hakone, Y. Asahina s. n. (paratype of *P. submarmariza*). Prov. Kai: Subashiriguchi, Mt. Fuji, F. Fujikawa s. n. (paratype of *P. submarmariza*); Lakeside of Yamanaka, Mt. Fuji, Y. Asahina s. n. (paratype of *P. submarmariza*, TNS, US). Prov. Izu: Mt. Amagi: Y. Asahina s. n. (paratype of *P. submarmariza*). Prov. Mino: Mt. Dainichidake, Gujo-gun, Y. Asahina (paratype of *P. submarmariza*). Prov. Yamato: Mt. Ohmine, K. Kimura 126 (paratype of *P. submarmariza*).

Parmelia marmorophylla Kurok., sp. nov.

Thallus ut in *P. marmariza*, sed lobis latioribus et amphithecio distincte rugosis differt.

Chemistry. Atranorin, chloroatranorin, salazinic acid, and consalazinic acid.

Type collection. Hatchoike, Mt. Amagi, Prov. Izu, Japan, on trunk of *Fagus crenata*, S. Kurokawa 81015 (holotype in TNS).

Thallus adnate to loosely adnate on bark of trees, greenish to whitish mineral gray, 8–15 cm or often more than 20 cm broad, lacking isidia and soredia, lobes subirregular, rather short, contiguous or often imbricate, 2–9 mm wide, upper surface shiny, plane to very weakly foveolate, continuous, often black-rimmed, coarsely lobulate with age, pseudocyphellae marginal and laminal, marginal pseudocyphellae subcontinuous, not conspicuous, laminal pseudocyphellae minute, 0.2–0.5 mm long, numerous and crowded, faintly white-rimmed, more or less elevated, hardly forming a network; medulla white; lower surface black, moderately to densely rhizinate; the rhizines simple to furcate, 1–2 mm long. Pycnidia common, conidia cylindrical, 6–8 μm long. Apothecia common, substipitate, 5–12 mm or sometimes more than 13 mm in diameter, disc brown, radially split with age, amphithecium distinctly rugose with conspicuously white-rimmed and elevated pseudocyphellae, hymenium 50–60 μm high, spores 8–9× 12–14 μm.

Distribution. Endemic to Japan.

As already mentioned in this paper, *P. marmorophylla* (Fig. 11) has been confused with *P. marmariza* by Japanese lichenologists (Asahina 1951, Yoshimura 1974) and Hale (1987). Even though minute and crowded pseudocyphellae are commonly found in these two species (Figs. 2C, 10B) the present new species is clearly distinguished from the latter species by larger thalli composed of much wider lobes (2–9 mm wide) with rotund apices and conspicuously rugose amphithecium. Chemically, in addition, this species does not contain fatty acids, which are demonstrated in all specimens of *P. marmariza*.

At present, *P. marmorophylla* is known only from Japan, where it has been most commonly collected on trunk of *Fagus crenata*. I believe it must be distributed in summer green forests of central and southern Korea.

Although *Fagus crenata* is distributed far north to Oshima Peninsula in Hokkaido, the northern most locality of *P. marmorophylla* known at present is

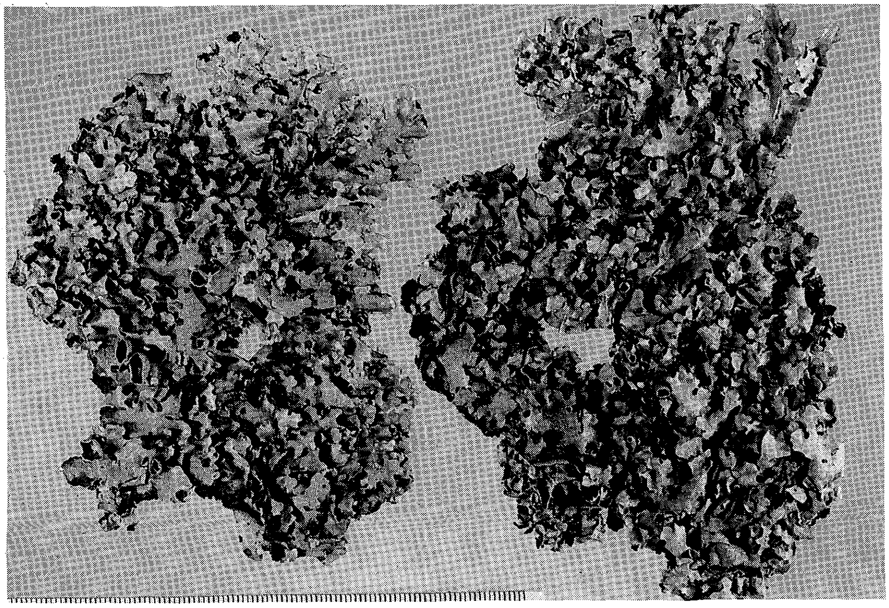

Fig. 11. Holotype of *P. marmorophylla*. Scale indicates mm.

northern Kanto District of Honshu. It is especially common in *Fagus crenata* forests on Mt. Amagi in Izu Peninsula, Oodaigahara Mts. in Kii Peninsula, and Mt. Ishizuchi in Shikoku.

While 59 additional specimens have been examined through this study, only the representative specimens and exsiccatae are listed below.

Exsiccatae examined. S. Kurokawa, Lich. Rar. Crit. Exs., nos. 29 and 234 (distributed as *Parmelia marmariza*).

Specimens examined. Honshu. Prov. Shimotsuke: Mt. Takahara, Y. Numajiri s. n. Prov. Kozuke: Fudo Water Fall, Mt. Akagi, S. Kurokawa 550480 (TNS, US). Prov. Sagami: Mt. Kintoki, Hakone, S. Kurokawa 58062 (TNS, DUKE, MEL, US). Prov. Izu: Hatchoike, Mt. Amagi, S. Kurokawa 81013 (TNS, H); Mt. Amagi, S. Kurokawa 57038 (TNS, H, M, MEL, US). Prov. Bingo: Mt. Hibasan, Hiba-gun, S. Kurokawa 73166 (TNS, H). Shikoku. Prov. Iyo: Mt. Ishizuchi, elevation 1000–1600 m, S. Kurokawa 60049 (TNS, DUKE, H, UPS); Mt. Onigajo, Kitauwa-gun, elevation about 1100 m, S. Kurokawa 72259 (TNS, H). Prov. Tosa: Mt. Kajigamori, Nagaoka-gun, on trunk of *Fagus crenata*, elevation about 1300 m, S. Kurokawa 72295 (TNS, H). Kyushu. Prov. Buzen: Mt. Hikosan, S. Kurokawa 62480 (TNS, H). Prov. Hizen: Mt. Ichibusa, S. Kurokawa 63120 (TNS, H). Yakushima Island: Hananoego, F. Fujikawa s. n.

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黒川　逍：**ウメノキゴケ科カラクサゴケ属の日本産の種（3）**

日本産カラクサゴケ属の研究の第3報として ***Parmelia adaugescens***（コウマクカラクサゴケ），***P. angustifolia***（ホソバカラクサゴケ　新称），***P. erumpens***（アワフキカラクサゴケ　新称），***P. fertilis***（トゲナシカラクサゴケ），***P. marmariza***（モンシロゴケモドキ　新称），***P. marmorophylla***（モンシロゴケ）について述べた．ホソバカラクサゴケはモンシロゴケの synonym とされてきたが，裂片の巾が狭いだけでなく短い擬盃点が表面に散生することで，明らかにモンシロゴケと異なるので独立種とした．トゲナシカラクサゴケの学名として ***P. cochleata*** が使われてきたが，***P. fertilis*** のタイプ標本にもヘルメット型の小裂片があり，両者は同一種と考えられたので，古い方の学名である ***P. fertilis*** を使うことにした．***P. marmariza*** のタイプ標本には脂肪酸が含まれ，形態的にも ***P. submarmariza*** と一致するものである．従って，これにモンシロゴケモドキという新和名を与え，従来モンシロゴケとされてきたものの学名として ***P. mormarophylla*** を提唱した．